IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Patent Application of	Confirmation No.: 8426
EARDLEY	Atty. Ref.: 36-1905
Serial No. 10/537,896	TC/A.U.: 2456
Filed: June 7, 2005	Examiner: Tom Chang

For: A METHOD OF ROUTING PACKETS IN A PACKET NETWORK (AS AMENDED)

* *

January 4, 2010

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF UNDER 37 C.F.R. § 41.37(c)

Sir:

Applicant has appealed to the Board of Patent Appeals and Interferences (Notice of Appeal filed November 4, 2009) from the last decision of the Examiner (Final Office Action dated May 4, 2009 and Advisory Action dated October 23, 2009).

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(I)   **REAL PARTY IN INTEREST**

The real party in interest is British Telecommunications public limited company, a corporation of the country of the United Kingdom.

(II)   <u>RELATED APPEALS AND INTERFERENCES</u>

The appellant, the undersigned, and the assignee are not aware of any related appeals, interferences, or judicial proceedings (past or present), which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

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(III) STATUS OF CLAIMS

Claims 1-11 are pending and have been rejected. No claims have been substantively allowed. All of rejected claims 1-11 are being appealed.

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(IV)   <u>STATUS OF AMENDMENTS</u>

An Amendment requesting reconsideration of the Final Rejection was filed on October 5, 2009. This Amendment proffered minor changes to the title and specification.

An Advisory Action was issued on October 23, 2009 continuing to reject all claims. The October 23, 2009 Advisory Action indicates that Applicant's October 5, 2009 Amendment was entered for purposes of appeal (see box 7(b)). Thus, the status of the amendments is that Applicant's October 5, 2009 Amendment has been entered, and the claims that are on appeal herein are those presented in Applicant's October 5, 2009 Amendment.

(V)   SUMMARY OF CLAIMED SUBJECT MATTER

Each independent claim, each dependent claim argued separately, and each claim having means plus function language is summarized below including exemplary reference(s) to page and line number(s) of the specification.

1.   A method of routing packets in a packet network [Figs. 1, 4-12, p.6, ll. 10-15, p. 14, ll. 11-16], said packet network including a chain of packet nodes, said chain comprising first and second access nodes [BS2 and BS3, p. 15, ll. 11-12] for communicating with one or more mobile nodes [MH2, p. 15, ll. 12-13] and one or more intermediate packet nodes [ER2, IR2 and ER3, p. 15, ll. 23-26, p. 17, ll. 23-30] said one or more intermediate packet nodes providing a path interconnecting said first and second access nodes [ER2, IR2 and ER3 interconnect BS2, BS3 for example, p. 17, l. 18- p. 18, l. 18], said method comprising the steps of:

installing, in said intermediate packet nodes, first routing data defining a first routing path in one direction along said chain to a mobile node via said first access node [primary heights, p. 2, l. 34-35, p. 15, ll. 1-5] and second routing data defining a second routing path in the opposite direction along said chain to said mobile node via said second access node [secondary heights generated, p. 3, ll. 1-2, p. 16, ll. 27-32];

operating each of said intermediate packet nodes to [p. 3, l. 3, p. 17, line 4]:

determine, on receipt of a packet destined for said mobile node, whether said packet is from another node on said chain or not [p. 3, ll. 4-5, p. 17, ll. 7-10]; and

a)   if the packet is determined to be from a node not on said chain, copying

the packet and routing said copy along one of said routing paths and routing said packet

along the other of said routing paths [p. 3, ll. 6-8, p. 17, ll. 14-16]; and

b)   if the packet is determined to be from another node on said chain, route

said packet along said chain only in the direction in which it is currently travelling [p. 3,

ll. 9-10, p. 17, ll. 10-14].

9.   A packet network including a chain of packet nodes [Figs. 1, 4-12, p.6, ll.

10-15, p. 14, ll. 11-16], said chain comprising:

first and second access nodes for communicating with one or more mobile nodes

[BS2 and BS3, p. 15, ll. 11-12]; and

one or more intermediate packet nodes providing a path interconnecting said first

and second access nodes [ER2, IR2 and ER3, p. 15, ll. 23-26, p. 17, ll. 23-30]; said

intermediate packet nodes having installed therein first routing data defining a first

routing path in one direction along said chain to a mobile node via said first access node

[primary heights, p. 2, l. 34-35, p. 15, ll. 1-5] and second routing data defining a second

routing path in the other direction along said chain to said mobile node via said second

access node [secondary heights generated, p. 3, ll. 1-2, p. 16, ll. 27-32] each

intermediate packet node being arranged in operation to [p. 3, l. 3, p. 17, line 4]

determine, on receiving a packet destined for said mobile node, whether said packet is

from another node on said chain or not [p. 3, ll. 4-5, p. 17, ll. 7-10] and

a)   if the packet is determined to be from a node not on said chain, copying the packet and routing said copy along one of said routing paths and routing said packet along the other of said routing paths [p. 3, ll. 6-8, p. 17, ll. 14-16]; and

b)   if the packet is determined to be from another node on said chain, route said packet along said chain only in the direction in which it is currently travelling [p. 3, ll. 9-10, p. 17, ll. 10-14].

11.   A computer readable medium storing a computer program or suite of computer programs arranged such that when executed by a computer they perform the method steps as set out in claim 1 [p.7, line 7, computer readable medium] (per Oct. 5, 2009 Amendment).

(VI) **GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

First, claim 11 stands rejected under 35 U.S.C. § 101 as allegedly being directed

to non-statutory subject matter.

Second, 1-3 and 5-11 stand rejected under 35 U.S.C. § 102(e) as allegedly being

"anticipated" over Karino et al. (U.S. Patent No. 7,327,671).

Third, claim 4 stands rejected under 35 U.S.C. § 103(a) as allegedly being

"obvious" over Karino et al. (U.S. Patent No. 7,327,671) in view of O'Neill. [1]

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[1] Although not necessarily appropriate for review by the Board, Applicant notes that the title and specification were objected to as allegedly being not descriptive and including informalities. It is believed that these objections have been obviated in view of Applicant's Amendment Under 37 C.F.R. § 1.116, filed on October 5, 2009, which was entered.

(VII) ARGUMENT

A. Claim 11 is Directed to Statutory Subject Matter Under 35 USC § 101.

Claim 11 stands rejected under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter. This rejection is erroneous and should be reversed at least for the following reasons.

The invention of claim 11, is directed to "A computer-readable medium" (i.e., a composition-one of the specifically identified classes of statutory subject matter in 35 USC § 101). Claim 11 recites "A computer-readable medium storing a computer program or suite of computer programs arranged such that when executed by a computer they perform the method steps as set out in claim 1." As such, claim 11 is a so-called "Beauregard claim." As the Board of Patent Appeals and Interferences explained in the aftermath of *Bilski* in *Ex parte Bo Li*, Appeal 2008-1213, decided on November 6, 2008 at p. 9, Beauregard claims qualify as patentable:

> "It has been the practice for a number of years that a 'Beauregard Claim'
> of this nature be considered statutory at the USPTO as a product claim.
> (MPEP 2105.01, I). Though not finally adjudicated, this practice is not
> inconsistent with *In re Nuijten*."

Further, the specification has been amended as requested by the Examiner as to what is meant by a computer readable medium. The specification indicates that "The program of instructions are carried on a computer readable medium such as a DVD, CD or a like tangible physical medium for execution by the processing apparatus."

In light of the specification (particularly as amended by the October 5, 2009 Amendment now entered), the Examiner's allegation that "Applicant does not further

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define this [the computer readable medium], in the specification which leads the

Examiner to construe the medium to include signals" such as a transitory, propagating

signal is unfounded.

Accordingly, claim 11 is clearly directed to statutory subject matter under 35

U.S.C. §101.

B. Claims 1-3 and 5-11 Are Not Anticipated Under 35 USC § 102 by Karino.

Claims 1 and 9

Claims 1-3 and 5-11 stand rejected under 35 U.S.C. § 102(e) as allegedly being

"anticipated" over Karino et al. (U.S. Patent No. 7,327,671). This rejection is erroneous

and should be reversed at least for the following reasons.

Anticipation under Section 102 of the Patent Act requires that a prior art

reference disclose every claim element of the claimed invention. See, e.g.,

Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1574 (Fed. Cir. 1986).

Karino fails to disclose every claim element of the claimed invention. For example,

Karino fails to disclose "*operating each of said intermediate packet nodes to: determine,*

on receipt of a packet destined for said mobile node, whether said packet is from

another node on said chain or not; and a) if the packet is determined to be from a node

not on said chain, copying the packet and routing said copy along one of said routing

paths and routing said packet along the other of said routing paths; and b) if the packet

is determined to be from another node on said chain, route said packet along said chain

only in the direction in which it is currently travelling," (emphasis added) as required by

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independent claim 1. Karino also fails to disclose "*each intermediate packet node being arranged in operation to determine, on receiving a packet destined for said mobile node, whether said packet is from another node on said chain or not* and a) if the packet is determined to be from a node not on said chain, copying the packet and routing said copy along one of said routing paths and routing said packet along the other of said routing paths; and b) if the packet is determined to be from another node on said chain, route said packet along said chain only in the direction in which it is currently travelling (emphasis added)," as required by independent claim 9.

Rather than "operating each of said intermediate packet nodes to determine, on receipt of a packet destined for said mobile node, whether said packet is from another node on said chain or not," Karino instead utilizes bicast routers that do not make the required determination of whether the packet is from another node on said chain or not. Karino instead utilizes a bicast router to always bicast the packet to an originally linked based station and to an adjacent base station, unless the bicast router receives a bicast release message, at which point it will transmit only along the primary communication route. Thus, the Karino bicast router never determines whether the packet is from another node on said chain or not, but instead makes its routing determination based on whether it has received a bicast release message or not. Further, Karino does not operating each of the asserted intermediate packet nodes to make the required determination, as further explained below.

Pages 3-4 of the Final Rejection alleges that with respect to claim 1, Karino teaches operating each of said packet nodes to: determine, upon receipt of a packet

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destined for said mobile node, whether said packet is from another node on said chain or not, as "(determine branch point, col. 32, lines 22-28; if the node is the branch point then it received a packet not on the chain, a router can be in unicast or bicast mode unicast indicates that the mobile host is in chain and bicast indicates not in chain Col 33 lines 43)". The Final Rejection on page 6 alleges that with regard to claim 9, the same portion of Karino discloses each intermediate node being arranged in operation to determine, on receiving a packet destined for said mobile node, whether said packet is from another node on said chain or not.

The Final Rejection refers to whether "the mobile host" is in chain or not. However, claims 1 and 9 recite "whether said packet is from another node on said chain or not." Claims 1 and 9 further recite said chain comprising first and second access nodes for communicating with one or more mobile nodes and one or more intermediate packet nodes." Thus, claims 1 and 9 define the chain as comprising the access nodes and the intermediate nodes. The mobile host of Karino is equivalent to the claimed mobile nodes and cannot be in chain.

The Final Rejection further alleges on pages 8-9 that the branch point retrieving message is used by the router to decide whether the data packet is received from and should be further forwarded to the currently established routing path, or the packet is not on a specific chain and must be routed via two paths. The Final Rejection thus concludes that "this clearly shows the equivalent functionality of the determination as recited in the claim."

However, Karino utilizes the branch point retrieving message sent to router R2"
for retrieving a branch point of both an original communication route between the host
network 1 and the originally linked base station BS2 and an adjacent communication
route between the host network 1 and the originally unlinked base station BS3 adjacent
to the originally unlinked base station BS2. See col. 31, ll. 3-12. The router R2" of
Karino does not "determine whether said packet is from another node on said chain or
not" as required by claims 1 and 9, but instead "updates the routing information itself
based on the received position recording message." See col. 31, ll. 13-14. Karino
contains no disclosure that the router R2" ever "determines whether the branch point
retrieving message is from another node on said chain or not.

Moreover, the branch point retrieving message of Karino is not "a packet
destined for said mobile node" as required by claims 1 and 9. Instead, it is a message
for retrieving a branch point of an original communication route and an adjacent
communication route, as noted above.

The Advisory Action alleges on page 2 that the "determine, upon receipt of a
packet destined for said mobile node, whether said packet is from another node on said
chain or not" as required by claim 1, "merely describes a node determining whether a
packet is meant to travel on the originally established path because the packet only
needs to travel on a previously established path/chain since the mobile host has not
moved to a new location that requires rerouting of the packets (determination a in claim
1), or that the transmission along 2 paths is required since the mobile host has moved
out of range of the original established path/chain (determination b in claim 1)."

The Final Rejection and Advisory Action have misconstrued the language of claims 1 and 9 on appeal. In particular, claims 1 and 9 do not recite the misconstrued language recited in the Advisory Action of "a node determining whether a packet is meant to travel on the originally established path because the packet only needs to travel on a previously established path/chain since the mobile host has not moved to a new location that requires rerouting of the packets" or "that the transmission along 2 paths is required since the mobile host has moved out of range of the original established path/chain." In so construing claims 1 and 9, the Advisory Action is improperly reading language into the claims that the claims do not in fact require in an attempt to show that Karino reads on the claims.

In contrast to Karino, claims 1 and 9 require operating **each** of said intermediate packet nodes to: determine, on receipt of a packet destined for said mobile node, whether said packet is from another node on said chain or not (emphasis added). The Final Rejection and Advisory Action point to no such determination being made by routers R4 and R5 (asserted to be intermediate packet nodes). Neither R4 nor R5 will determine the origination of the packet but will follow their routing information in that R4 routes data from R2 to BS2 and R5 routes data from R2 to BS3.

In fact, in Karino, packets from host network 1 destined for mobile host MH, when received at the bicast router R2", will be bicast from R2" to both BS2 and BS3, and the router R2" does not make a determination as to whether the packet is from another node on said chain (R2", R4" and R5"). Instead, Karino will forward the packet to BS2 and BS3 (see col. 32, ll. 41-54), unless the modification of a branch point retrieving

message and bicast release message has been received at R2" see col. 33, ll. 30-63.

Therefore, the determination at R2" of whether to unicast or bicast the packet is not made based on whether the packet is from another node on said chain or not, but is instead based on whether the bicast release message has been received at R2".

Furthermore, appealed claims 1 and 9 require that if the packet is determined to be from a node not on the chain, copy the packet and routing the copy along one of the routing paths and routing the packet along another of said routing paths. In contrast, in Karino, when a packet is received at router R2" from host network 1 (not on the R2", R4", R5" chain) after the bicast release message has been received, the router will transfer the packet along the primary communication route only, and thus not "copy the packet and routing the copy along one of the routing paths and routing the packet along another of said routing paths" as required by claims 1 and 9.

For the above reasons, claims 1 and 9 are not anticipated by Karino. Claims 2-3, 5-8 and 10 are not anticipated based on their dependence on claims 1 or 9. It is asserted based on the above, that the rejection is erroneous and should be reversed.

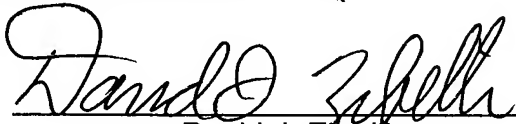## C. Claim 4 is Not Obvious Under 35 USC § 103 by Karino in view of O'Neill.

With respect to claim 4, O'Neill does not solve the deficiencies of Karino noted above. Accordingly, claim 4 patentably defines over Karino and O'Neill taken singly or in combination. Accordingly, the rejection is erroneous and should be reversed.

CONCLUSION

In conclusion it is believed that the application is in clear condition for allowance; therefore, early reversal of the Final Rejection and passage of the subject application to issue are earnestly solicited.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: David J. Zibelli
Reg. No. 36,394

DJZ:
901 North Glebe Road, 11th Floor
Arlington, VA 22203-1808
Telephone: (703) 816-4000
Facsimile: (703) 816-4100

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(VIII) <u>CLAIMS APPENDIX</u>

1.   A method of routing packets in a packet network, said packet network including a chain of packet nodes, said chain comprising first and second access nodes for communicating with one or more mobile nodes and one or more intermediate packet nodes, said one or more intermediate packet nodes providing a path interconnecting said first and second access nodes, said method comprising the steps of:

installing, in said intermediate packet nodes, first routing data defining a first routing path in one direction along said chain to a mobile node via said first access node and second routing data defining a second routing path in the opposite direction along said chain to said mobile node via said second access node;

operating each of said intermediate packet nodes to:

determine, on receipt of a packet destined for said mobile node, whether said packet is from another node on said chain or not; and

a)   if the packet is determined to be from a node not on said chain, copying the packet and routing said copy along one of said routing paths and routing said packet along the other of said routing paths; and

b)   if the packet is determined to be from another node on said chain, route said packet along said chain only in the direction in which it is currently travelling.

2.   A method according to claim 1, wherein said packet (s) include (s) a unique address of the mobile node.

3.   A method according to claim 1, wherein said unique address is the same before and after a handover of the mobile node from the first access node to the second access node.

4.   A method according to claim 3 further comprising the steps of operating each node in the packet network:

a)   to associate a routing value with said unique address;

b)   responsive to the receipt of said packet at said node to forward said packet towards another node having a lower routing value associated with said unique address;

c)   responsive to the creation of a wireless link between a mobile node having said unique address and said node to reduce said routing value associated with said unique address to a lower value than that associated with said unique address by the other nodes in said network.

5.   A method according to claim 3, wherein said first routing data are installed prior to the handover of said mobile node from said first access node to said second access node.

6.   A method according to claim 3, wherein said second routing data include

data indicating that said second routing data relates to the handover of said mobile

node from said first access node to said second access node.

7.   A method according to claim 1, wherein said second routing data are

installed in response to a routing control message generated at said second access

node and transmitted to said first access node.

8.   A method according to claim 1, wherein said first access node and said

second access node are wireless access nodes and wherein said packets are sent to

and received from said mobile node via a wireless transmission system.

9.   A packet network including a chain of packet nodes, said chain

comprising:

first and second access nodes for communicating with one or more mobile

nodes; and

one or more intermediate packet nodes providing a path interconnecting said first

and second access nodes; said intermediate packet nodes having installed therein first

routing data defining a first routing path in one direction along said chain to a mobile

node via said first access node and second routing data defining a second routing path

in the other direction along said chain to said mobile node via said second access node

each intermediate packet node being arranged in operation to determine, on receiving a

packet destined for said mobile node, whether said packet is from another node on said

chain or not and

a)   if the packet is determined to be from a node not on said chain, copying

the packet and routing said copy along one of said routing paths and routing said packet

along the other of said routing paths; and

b)   if the packet is determined to be from another node on said chain, route

said packet along said chain only in the direction in which it is currently travelling.

10.   A packet node for use in a packet network according to claim 9.

11.   A computer readable medium storing a computer program or suite of

computer programs arranged such that when executed by a computer they perform the

method steps as set out in claim 1.

(IX) **EVIDENCE APPENDIX**

None.

(X) <u>RELATED PROCEEDINGS APPENDIX</u>

None.

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